

### **REMARKS/ARGUMENTS**

The Applicant originally submitted Claims 1-30 in the application. In the present response, the Applicant has not amended, canceled, or added any claims. Accordingly, Claims 1-30 are currently pending in the application.

#### **I. Rejection of Claims 1, 2, 8, 9, and 23 under 35 U.S.C. §102**

The Examiner has rejected Claims 1, 2, 8, 9, and 23 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,793,250 to Fukushima. The Applicant respectfully disagrees since Fukushima does not teach receiving a signal containing first and second points located at first and second angles and determining one of the first and second angles is an offset angle by which a signal has been rotated as recited in independent Claims 1 and 8.

Fukushima teaches a demodulator applicable to radio Local Area Network (LAN) communications. (*See* column 1, lines 7-9.) Data, transmitted as a radio input signal, is differentially modulated with respect to two adjacent symbol timings, generating two quadrature components that are modulated in conformance with the Institute of Electrical and Electronic Engineers (IEEE) Project 802.11 Spread Spectrum (SS) communication system. (*See* column 4, lines 63-65 and column 5, lines 12-16.) The received input signal is subjected to a two-phase quadrature demodulation that generates an I component (in-phase component) and a Q component (quadrature component). The I and Q components are converted to digital form and the angle between the I and Q components is calculated. (*See* column 5, lines 12-36.)

The Examiner appears to assert that the I and Q components are the first and second points as recited in independent Claims 1 and 8. Even assuming *arguendo* that this is true, while Fukushima teaches calculating the angle between the I and Q component of a signal received, the Applicant fails to find where Fukushima teaches calculating the angle of I and the angle of Q for an incoming signal and then determining which of these angles is the offset angle. On the contrary, a first detector 17 of Fukushima calculates the difference of phase angle of the I and Q components from a first and subsequent symbol and generates a frequency offset or error of these uncompensated phase angles. (See column 5, lines 37-50.) Thus, Fukushima generates a frequency offset based on the angle between the I and Q components but does not determine which angle of the I component or the angle of the Q component is an offset angle by which a signal has been rotated.

As such, Fukushima does not teach determining one of a first and second angles is an offset angle by which an input signal has been rotated as recited in independent Claims 1 and 8. Therefore, Fukushima does not disclose each and every element of independent Claims 1 and 8 and as such, does not anticipate independent Claims 1 and 8 and Claims dependent thereon. Accordingly, the Applicant respectfully requests the Examiner to withdraw the §102(b) rejection with respect to Claims 1, 2, 8, and 9 and allow issuance thereof.

Regarding dependent Claim 23, the Examiner states that Fukushima teaches all the limitations of claims 1, 8, and 22 respectively. (See Examiner's Action dated August 28, 2006, page 3.) However, the Examiner later states that Fukushima does not disclose each and every element of independent Claim 22 but that Fukushima combined with U.S. Patent No. 5,412,695 to Murata does disclose each and every element of independent Claim 22. (See Examiner's Action dated August 28,

2006, pages 4-5.) As such, the present response will argue dependent Claim 23 in Section II below with regard to the §103(a) rejection of independent Claim 22.

## **II. Rejection of Claims 4-5, 11-12, 22, 25-26, and 29 under 35 U.S.C. §103**

The Examiner has rejected Claims 4-5, 11-12, 22, 25-26, and 29 under 35 U.S.C. §103(a) as being unpatentable over Fukushima in view of Murata. The Applicant respectfully disagrees.

As argued above, Fukushima does not teach each and every element of independent Claims 1 and 8. Fukushima also does not suggest determining one of a first and second angles is offset by which a signal has been rotated. Instead, Fukushima relies on the angle between I and Q components and the comparison of this angle with subsequent I and Q components to generate a frequency offset. (See column 5, lines 12-50.) Additionally, the Applicant does not find where Murata teaches or suggests determining one of a first and second angles is an offset angle by which a signal has been rotated as recited in independent Claims 1 and 8. Murata discloses a modem demodulating part having an A/D converter and including a frequency offset computing part and an offset renewal part that receives a signal and processes the received signal. (See column 4, lines 17-63.) Murata has not been cited to cure the noted deficiency of Fukushima but to teach the subject matter of dependent claims 4, 5, 11, and 12. (See Examiner's Action dated August 26, 2006, pages 3-4.) As such, the cited combination of Fukushima and Murata does not provide a *prima facie* case of obviousness for independent Claims 1 and 8 and Claims dependent thereon. Therefore, the cited combination does not render dependent Claims 4, 5, 11, and 12 unpatentable. Accordingly, the Applicant respectfully requests the Examiner to withdraw the §103(a) rejection of Claims 4, 5, 11, and 12 and allow issuance thereof.

Regarding independent Claim 22, as argued above, Fukushima does not teach or suggest determining one of a first and second angles is an offset angle by which a signal has been rotated. Accordingly, Fukushima does not teach or suggest an apparatus comprising angle determination circuitry that determines one of a first and second angles is an offset angle by which the first and second points have been rotated from an expected constellation of signals as recited in independent Claim 22.

Murata has not been cited to cure this deficiency of Fukushima, but rather to disclose an apparatus that determines the difference between a received constellation of signals and an expected constellation of signals. (See Examiner's Action dated August 26, 2006, page 5.) As such, the cited combination of Fukushima and Murata does not provide a *prima facie* case of obviousness for independent Claim 22 and Claims dependent thereon. Thus, the cited combination does not render claims 22-23, 25-26, and 29 unpatentable. Accordingly, the Applicant respectfully requests the Examiner to withdraw the §103(a) rejection of Claims 22-23, 25-26, and 29 and allow issuance thereof.

### **III. Rejection of Claims 15-21 under 35 U.S.C. §103**

The Examiner has rejected Claims 15 and 16 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,848,346 to Takashiro in view of Fukushima. The Applicant respectfully disagrees.

The Examiner states that Takashiro does not disclose a system for recovering primary channel operation including angle determination circuitry that determines one of a first and second

angles is an offset angle by which a signal has been rotated. (See Examiner's Action dated August 28, 2006, pages 7-8.) The Examiner further states that Fukushi cures this deficiency. As argued above, however, Fukushi does not teach or suggest angle determination circuitry that determines one of a first and second angles is an offset angle by which a signal has been rotated as also recited in independent Claim 15. The cited combination of Takashiro and Fukushi therefore, does not teach or suggest each and every element of independent Claim 15 and, as such, does not provide a *prima facie* case of obviousness of independent Claim 15 and Claims dependent thereon. Accordingly, the Applicant respectfully requests the Examiner withdraw the §103(a) rejection of Claims 15 and 16 and allow issuance thereof.

The Examiner has rejected Claims 17-21 under 35 U.S.C. §103(a) as being unpatentable over Takashiro in view of Fukushi, and in further view of the following: U.S. Patent No. 5,790,594 to Peng for Claim 17; Murata for Claims 18-19; and U.S. Patent No. 6,426,946 to Takagi, *et al.* for Claims 20-21. The Applicant respectfully disagrees.

As discussed above, the applied combination of Takashiro and Fukushi does not teach or suggest angle determination circuitry that determines one of a first and second angles is an offset angle by which a signal has been rotated. Peng has not been cited to cure the deficiency of Takashiro and Fukushi but to teach the subject matter of dependent Claim 17. (See Examiner's Action dated August 26, 2006, page 9.) Murata has not been cited to cure the deficiency either, but to teach the subject matter of dependent Claims 18-19. (See Examiner's Action dated August 26, 2006, page 10.) Takagi has not been cited to cure the deficiency as well, but to teach the subject matter of dependent Claims 20-21. (See Examiner's Action dated August 26, 2006, page 11.) As such, the applied

combinations do not provide a *prima facie* case of obviousness for independent Claim 15 and Claims dependent thereon. Accordingly, the Applicant respectfully requests the Examiner to withdraw the §103(a) rejection of dependent Claims 17-21 and allow issuance thereof.

**IV. Rejection of Claims 3, 6-7, 10, 13-14, 24, 27-28, and 30 under 35 U.S.C. §103**

The Examiner has rejected Claims 3, 6-7, 10, 13-14, 24, 27-28, and 30 under 35 U.S.C. §103(a) as being unpatentable over Fukushi in view of the following: Peng for Claims 3, 10, and 24; Takagi for Claims 6-7, 13-14, and 27-28; and U.S. Patent No. 4,462,108 to Miller for Claim 30. The Applicant respectfully disagrees.

As discussed above, Fukushi does not teach or suggest determining one of a first and second angles is an offset angle by which a signal has been rotated as recited in independent Claims 1, 8, and 22. Neither Peng, Takagi, nor Miller has been cited to cure the noted deficiency of Fukushi but to teach the subject matter of the above cited dependent Claims. (See Examiner's Action dated August 26, 2006, pages 5-7 and 12.) Thus, the cited combination of Fukushi with either Peng, Takagi, or Miller does not provide a *prima facie* case of obviousness of independent Claims 1, 8, and 22 and Claims dependent thereon. Accordingly, Claims 3, 6-7, 10, 13-14, 24, 27-28, and 30 are not unpatentable in view of the cited combination and the Applicant respectfully requests the Examiner to withdraw the §103(a) rejection of Claims 3, 6-7, 10, 13-14, 24, 27-28, and 30 and allow issuance thereof.


**V. Conclusion**

In view of the foregoing remarks, the Applicant now sees all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicits a Notice of Allowance for Claims 1-30.

The Applicant requests the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

HITT GAINES, PC



J. Joel Justiss  
Registration No. 48,981

Dated: November 27, 2006

P.O. Box 832570  
Richardson, Texas 75083  
(972) 480-8800